

CLAIMS

- 1 1. A circuit for operating a transistor as a rectifier, said circuit comprising:
 - 2 a transistor;
 - 3 a control circuit operating said transistor as a function of the Vds voltage potential of
 - 4 said transistor and a Vds indication signal during a particular cycle.

- 1 2. A circuit as recited in claim 1 wherein said Vds indication signal is the on-time
2 duration of said Vds voltage potential in a previous cycle and the on-time and off-time
3 duration of a subsequent cycle is adjusted as a function of said on-time duration of said Vds
4 voltage potential in said previous cycle.

- 1 3. A circuit as recited in claim 1 wherein said Vds indication signal is the off-time
2 duration of said Vds voltage potential in a previous cycle and the on-time and off-time
3 duration of a subsequent cycle is adjusted as a function of said off-time duration of said Vds
4 voltage potential in said previous cycle.

- 1 4. A circuit as recited in claim 1 wherein said Vds indication signal is the on-time
2 duration of said Vds voltage potential in a present cycle and the on-time and off-time
3 duration of a subsequent cycle is adjusted as a function of said on-time duration of said Vds
4 voltage potential in said present cycle.

1 5. A circuit as recited in claim 1 wherein said Vds indication signal is the off-time
2 duration of said Vds voltage potential in a present cycle and the on-time and off-time
3 duration of a subsequent cycle is adjusted as a function of said off-time duration of said Vds
4 voltage potential in said present cycle.

1 6. A circuit as recited in claim 4 wherein a reference signal is provided and said control
2 circuit adjusts said reference signal upward when said detected Vds voltage is at a diode
3 voltage potential for a duration greater than a first predefined time period.

1 7. A circuit as recited in claim 5 wherein said control circuit adjusts said reference
2 signal downward when said detected Vds voltage is at a diode voltage potential for a
3 duration less than a second predefined time period.

1 8. A circuit as recited in claim 4 wherein a ramp voltage is provided and when the
2 voltage potential of said ramp voltage and said reference voltage are at the same level, said
3 transistor is operated.

1 9. A circuit as recited in claim 12 wherein said control circuit adjusts said reference
2 signal upward when said detected Vds voltage is at a diode voltage potential for a duration
3 greater than a first predefined time period.

1 10. A circuit as recited in claim 12 wherein said control circuit adjusts said reference
2 signal downward when said detected Vds voltage is at a diode voltage potential for a
3 duration less than a second predefined time period.

1 11. A circuit as recited in claim 12 wherein operating said transistor to turn off said
2 transistor.

1 12. A method for operating a transistor as a rectifier, comprising the steps of:
2 detecting the Vds voltage of a transistor;
3 operating said transistor as a function of the duration of said detected Vds voltage in
4 the range of a diode voltage potential and a Vds indicator signal during a particular cycle.

1 13. A method as recited in claim 12 wherein in said operating step, said transistor is
2 operated at a later point in time in a subsequent cycle if said detected Vds voltage is at a
3 particular diode voltage potential for duration greater than a first predefined time period.

1 14. A method as recited in claim 12 wherein in said operating step, said transistor is
2 operated at an earlier point in time in a subsequent cycle if said detected Vds voltage is at a
3 particular diode voltage potential for duration less than a second predefined time period.

1 15. A method as recited in claim 12 wherein a reference voltage is provided and said
2 reference voltage is adjusted as a function of said detected Vds voltage.

1 16. A method as recited in claim 15 wherein said transistor is operated when said
2 reference voltage and said detected Vds voltage of said transistor are in the same voltage
3 potential range.

1 17. A method as recited in claim 16 wherein said reference voltage is adjusted upward
2 when the Vds voltage of said transistor is at a diode voltage for a duration greater than a first
3 predefined time period.

1 18. A method as recited in claim 16 wherein said reference voltage is adjusted downward
2 when the Vds voltage of said transistor is at a diode voltage for a duration less than a second
3 predefined time period.

1 19. A method as recited in claim 31 wherein a ramp voltage is provided and said
2 reference voltage is adjusted as a function of said detected Vds voltage.

1 20. A method as recited in claim 19 wherein said transistor is operated when said
2 reference voltage and said ramp voltage are in the same voltage potential range.